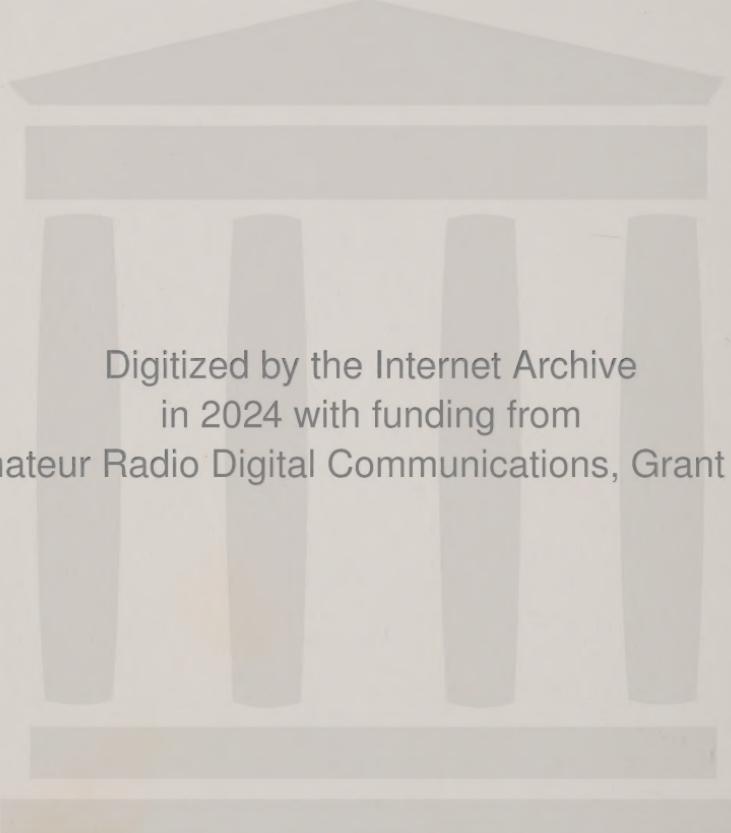


SSB

ELECTRONIC

Shortform-Catalogue





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SHORTFORM CATALOGUE

1st edition

With special thanks to
*Mr. Gerald Rodski,
K3MKZ,*
for assistance and translation.



SUPER LOW-NOISE AMPLIFIERS

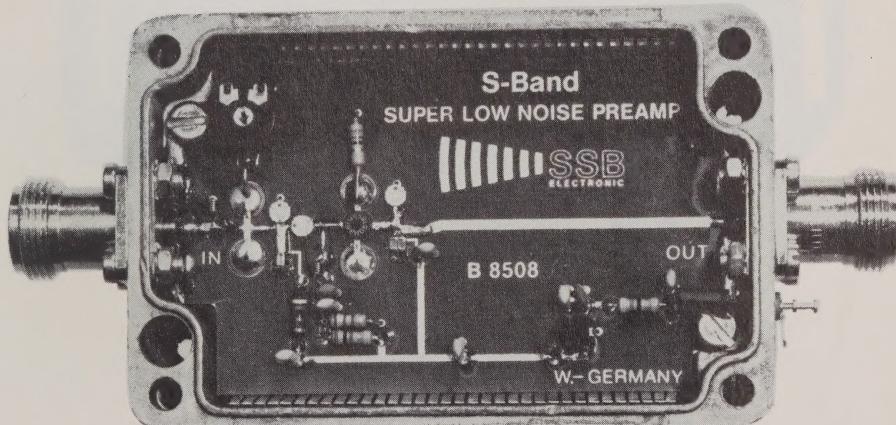
The super low-noise preamplifier series is a special design for EME, Satellite and other weak signal applications. Each unit is individually tuned for the lowest noise figure and maximum gain on an **EATON 2075 NOISE-GAIN-ANALYZER** and a **HP 8753 B NETWORK ANALYZER**.

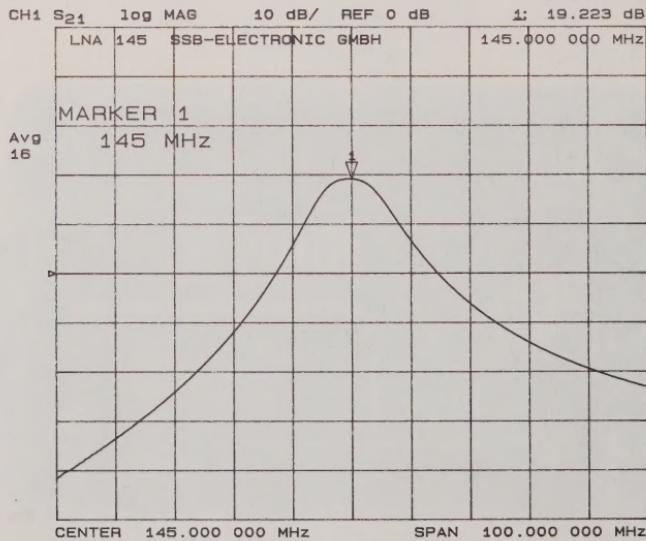
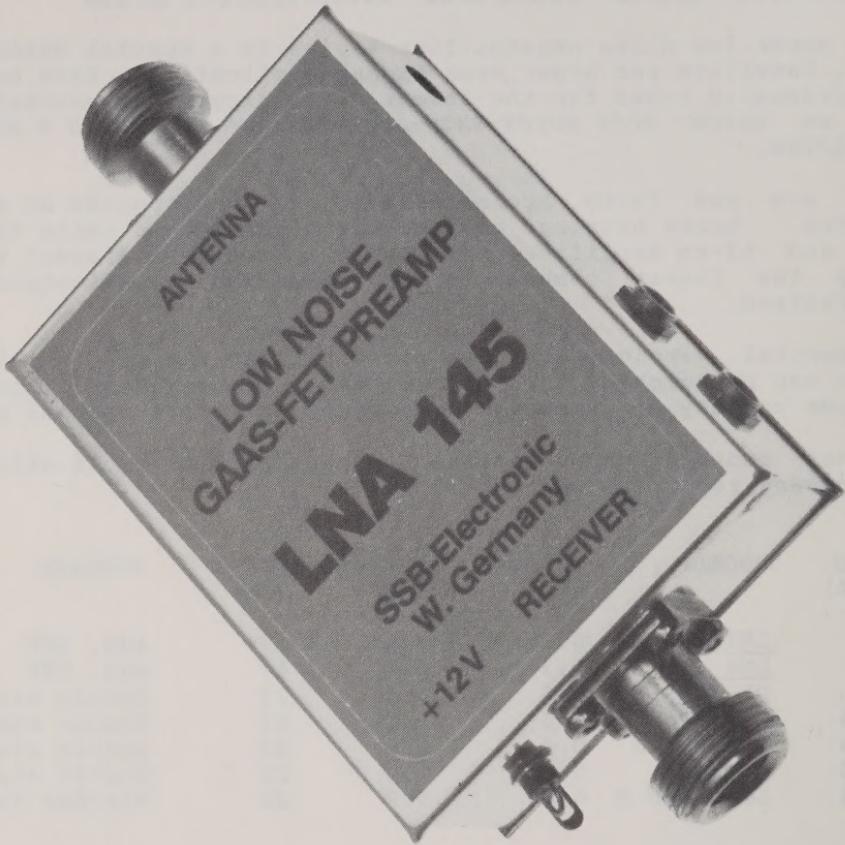
The 2-m and 70-cm preamplifiers are constructed in silver plated brass housings and feature N-connectors while the 23-cm and 13-cm amplifiers are housed in aluminum diecast boxes. Only the finest components are used and specifications are guaranteed.

Commercial versions of these preamplifiers are also available. They can be supplied in environmentally protected housings with a wide variety of connector options to suit your special needs.

Please contact us regarding your particular application and frequency requirements.

| FREQ. (MHZ) | MODEL | N.F. min (dB) | N.F. max (dB) | GAIN (dB) | REMARKS |
|------------------------|-------------------|--------------------------|--------------------------|----------------------|----------------|
| 144 | <u>LNA 145</u> | 0.3 | 0.4 | 17 | Add. BPF |
| 432 | <u>LNA 435</u> | 0.3 | 0.4 | 17 | Add. BPF |
| 902 | <u>DX 902</u> | 0.5 | 0.6 | 23 | Double stage |
| 1296 | <u>DX 1296 S</u> | 0.5 | 0.6 | 22 | Double stage |
| 2304 | <u>DX 2304 S</u> | 0.8 | 1.0 | 22 | Double stage |
| 2320 | <u>DX 2320</u> | 0.8 | 1.0 | 22 | Double stage |
| 1694 | <u>LNA 1700 S</u> | 0.8 | 0.9 | 22 | Weather Sat. |

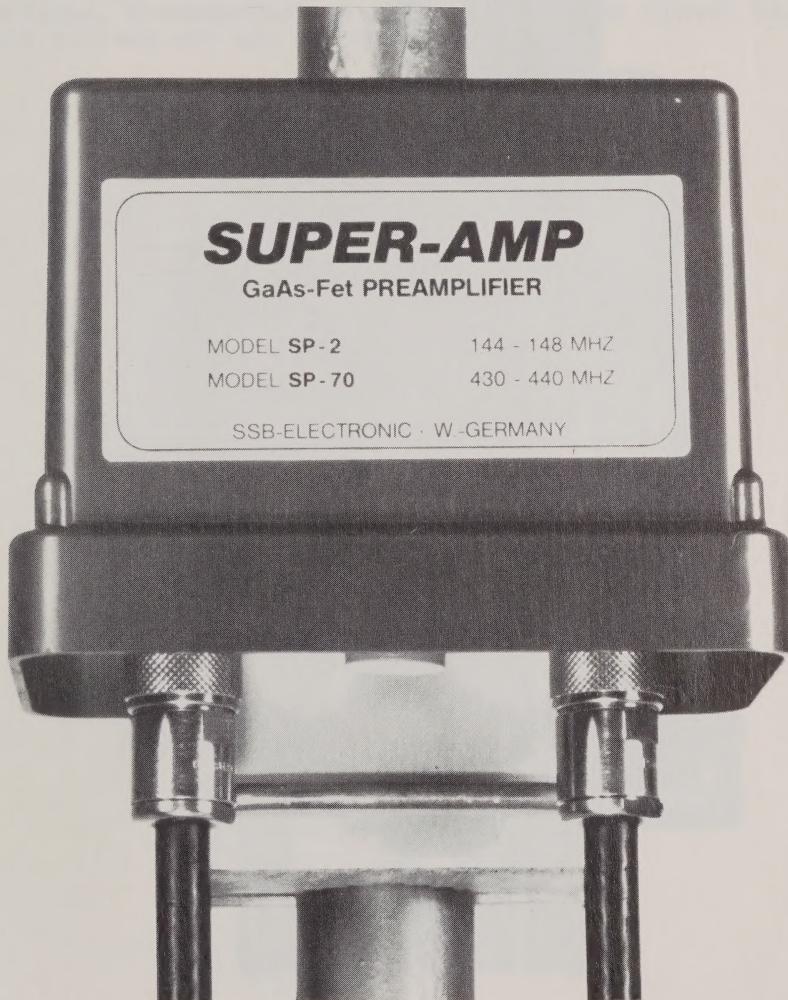




LOW-NOISE MAST MOUNTED PREAMPLIFIERS

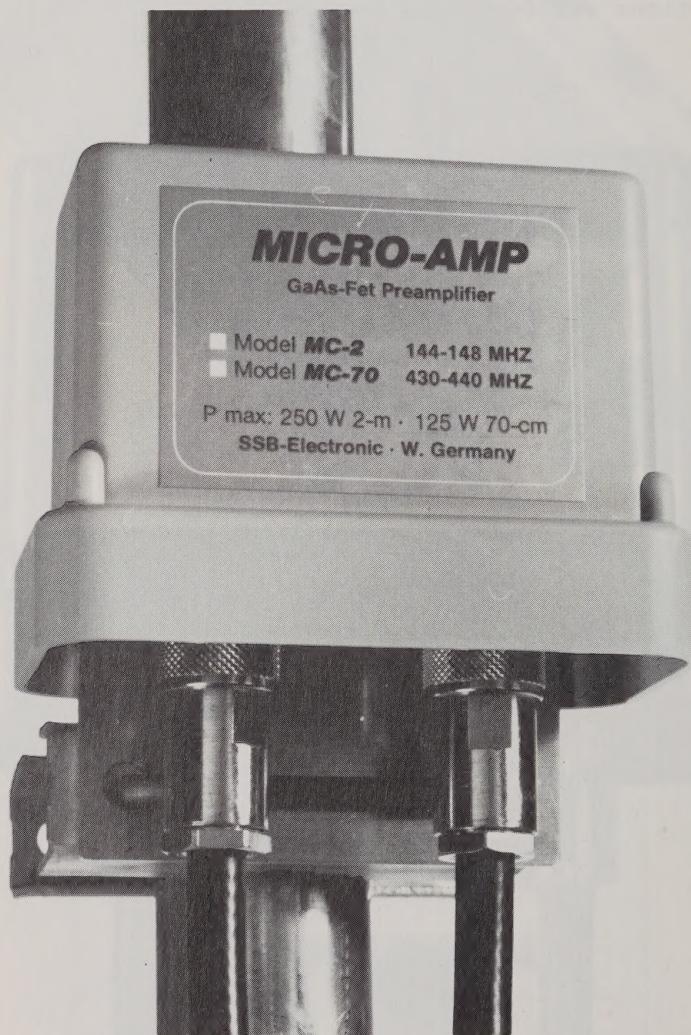
This series of low-noise mast mounted preamplifiers features: RF sensed (VOX) switching for medium power levels and hard keying (PTT) for higher power applications. A weatherproof housing, stainless steel hardware, zinc plated mastclamps, N-connectors as well as remote or direct feeding of supply voltage are all standard features.

The **SUPER-AMP** series is also available in shielded metal housings for indoor use. Commercial versions of these preamplifiers are also available, please contact us regarding your particular applications and frequency requirements.



| BAND | MODEL | NF dB | GAIN dB | INS. LOSS | P MAX | VOX/PTT |
|-------|------------------------|-------|---------|-----------|---------------|---------|
| 2-m | MICRO-AMP MC-2 | * 1.0 | 14 | 0.2 dB | 125/250 Watts | |
| 2-m | SUPER-AMP SP-2 | 0.8 | 10-20 | 0.1 dB | 200/750 Watts | |
| 70-cm | MICRO-AMP MC-70 | 1.3 | 12 | 0.4 dB | 125/250 Watts | |
| 70-cm | SUPER-AMP SP-70 | 0.9 | 10-20 | 0.2 dB | 100/500 Watts | |
| 23-cm | MV 1296 S | 0.9 | 20 | 0.3 dB | 10 /100 Watts | |

* Teflon SO-239 connectors



BROADBAND LOW-NOISE AMPLIFIERS

The **LNA 3000** is a multi-purpose broadband amplifier covering 50 - 3000 MHz with a super flat gain response and a low noise figure throughout its entire range.

This amplifier can be used in a wide variety of applications such as: 6-m ... 13-cm HAM band reception, scanners, broadband receivers, weather and navigation satellite reception or wherever improved sensitivity and lower noise figure is desired.

The super performance achieved by the **LNA 3000** is derived through the incorporation of a unique parallel microwave GaAs-Fet design.

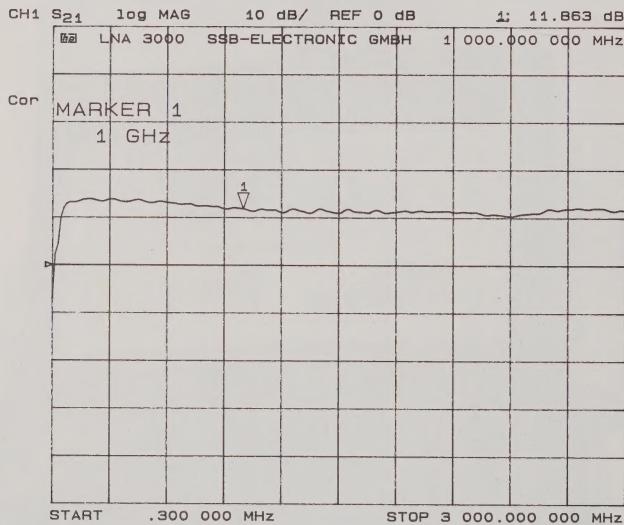
A weatherproof housing, stainless steel hardware, zinc plated mastclamps, N-connectors as well as remote or direct feeding of supply voltage are all standard features.



Technical data

LNA 3000

| | | |
|--------------------------|-------------|-----|
| Frequency range (- 1 dB) | 50 ... 3000 | MHz |
| Gain typ. | 13 | dB |
| Noise figure typ. | 1.0 GHz | dB |
| | 2.0 GHz | dB |
| | 3.0 GHz | dB |
| Supply voltage | 12 ... 15 | V |
| Current consumption | 120 | mA |



SEQUENCE CONTROLLERS

DCW 15 A

The **DCW 15 A** allows our 144 & 432 MHz mast mounted preamplifiers to be used at their maximum through power ratings by providing the proper sequencing of both power amplifier and preamp switching. The **DCW 15 A** guarantees that preamp switch-over takes place before power amplifier turn on occurs. This insures that hot switching which could damage the relay contacts or destroy the GaAs-Fet does not occur.

This unit also supplies the necessary operating voltage to the preamplifier via the outgoing feedline.



DCW 15-23

Same as above but suitable for use with the **MV 1296 S** 23-cm preamplifier.

DCC-12

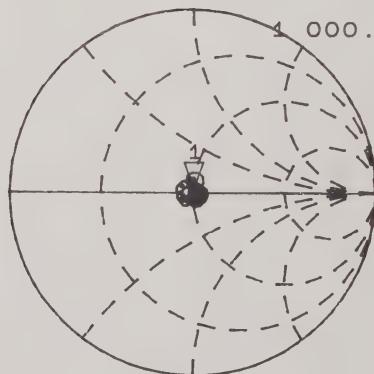
When sequenced control of our preamplifiers is not required due to operating within their maximum safe RF sensed (VOX) power levels, the DCC-12 can be used to supply the necessary operating voltage to the preamplifier via the outgoing feed-line. In addition, this unit can be used as a general purpose bias "T" to feed remote amplifiers & converters.

The "PL"-version is suitable for applications up to 500 MHz. The "N"-version offers low insertion loss and perfect impedance matching up to 3 GHz.



CH1 S₁₁ 1 U FS 1: 50.227 Ω 1.7891 Ω 284.74 pH
DCC 12 N 1 000.000 000 MHz

Cor



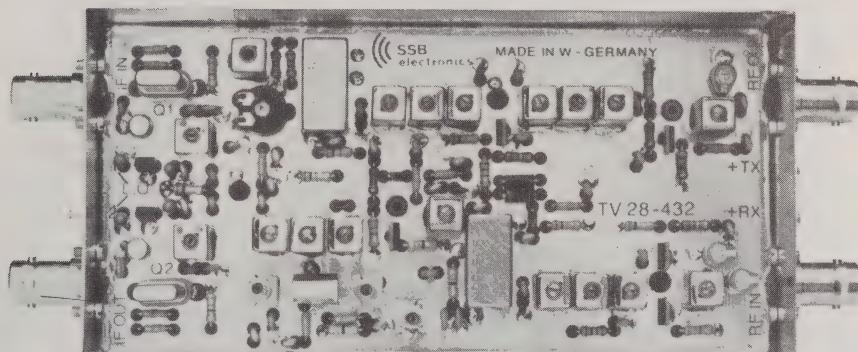
TV SERIES VHF . . . UHF TRANSVERTERS

Since many amateurs do not require a high power transverter housed in a custom cabinet complete with metering and switching relays, we are pleased to offer the TV series of VHF/UHF transverter modules.

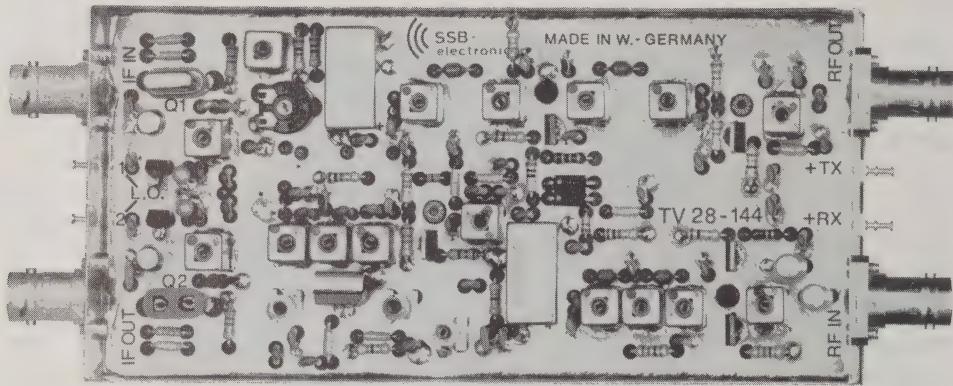
These transverter modules feature: Low-noise GaAs-Fet preamplifiers, two separate RX-TX double balanced Schottky mixers for outstanding strong signal handling capability, a 2nd L.O. (crystal not provided), and a low distortion TX amplifier.

These high performance low cost transverters are carefully tuned and tested on spectrum and noise-gain analyzers for maximum performance.

| MODEL | TV 28-50 | TV 28-144 | TV 28-220 | TV 28-432 | |
|------------------------|-----------------|------------------|------------------|------------------|-----|
| RF | 50-52 | 144-146 | 220-222 | 432-434 | MHz |
| IF | 28-30 | 28-30 | 28-30 | 28-30 | MHz |
| 2nd L.O. | <i>IF shift</i> | <i>RPT offs.</i> | <i>IF shift</i> | <i>OSCAR</i> | |
| Drive level | 1-500 | 1-500 | 1-500 | 1-500 | mW |
| RF output power | 100 | 100 | 100 | 100 | mW |
| N.F. (typ.) | 1.5 | 1.4 | 1.5 | 1.8 | dB |
| Conversion Gain | 20 | 20 | 20 | 20 | dB |
| Connectors | BNC | BNC | BNC | BNC | |
| Supply voltage | 13.8 | 13.8 | 13.8 | 13.8 | VDC |
| Dimensions | 148 X 74 X 40 | | | | mm |



For extended dynamic range performance, an optional high level receive DBM operating at 50 mW L.O. power is available. Please specify **OPTION 01** when ordering.



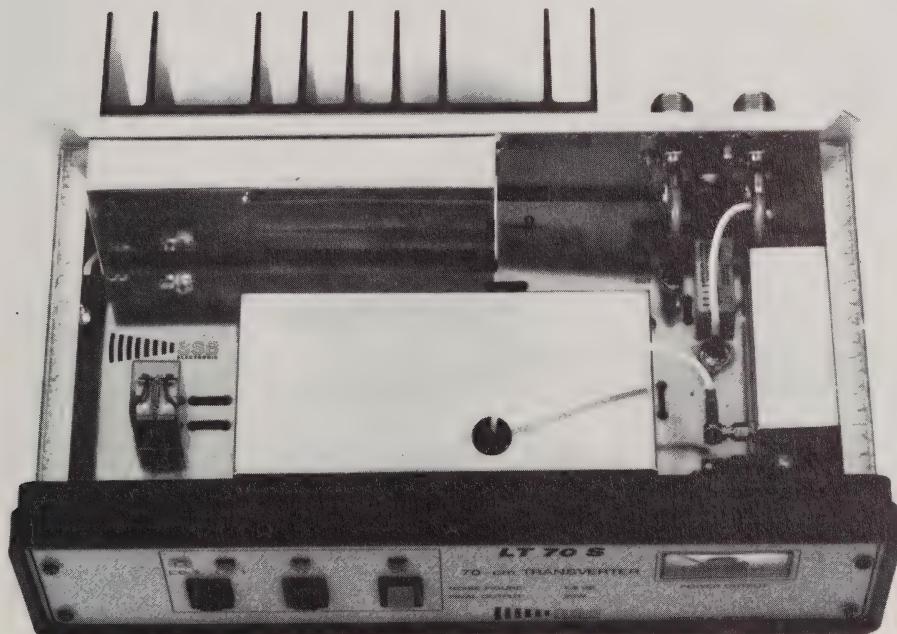
HIGH PERFORMANCE TRANSVERTERS

The "LT" Series has gained a worldwide reputation among EME operators, OSCAR users and contest operators as the finest transverters available. These transverters combined with your HF transceiver will outperform any of the multi-mode VHF/UHF transceivers available on the market today.

They feature:

Low noise GaAs-Fet preamplifiers and two separate RX-TX double balanced Schottky mixers with the receive mixer operating at 50 mW L.O. power for extended dynamic range performance. A second switchable L.O. is also provided to allow: repeater offset, OSCAR operation, or change of IF frequency during a multi operator contest environment. These transverters also include: A built in adjustable attenuator to match IF drive levels of 1 - 500 mW, an illuminated front panel output power meter, manual or PTT switching, plus a built in option that will allow the operator to bypass the T/R switching relay for split RX In - TX-Out signal paths.

Each transverter is rated at 20 watts true linear output. This type of performance can only be achieved by using high biased final transistors capable of delivering 50 watts of RF output.



| MODEL | LT 6 S | LT 2 S | LT 220 S | LT 70 S | |
|-------------------|----------------|----------|----------|---------|-------|
| RF | 50-52 | 144-146 | 220-222 | 432-434 | MHz |
| IF | 28-30 | 28-30 | 28-30 | 28-30 | MHz |
| 2nd L.O. | IF shift | RPT OFFS | IF shift | OSCAR | |
| Drive level | 1-500 | 1-500 | 1-500 | 1-500 | mW |
| RF output power | 20 | 20 | 20 | 20 | Watts |
| N.F. (typ.) | 1.0 | 1.0 | 1.3 | 1.8 | dB |
| Conversion gain | 20 | 20 | 20 | 20 | dB |
| 3rd order IP | + 26 | + 26 | + 23 | + 21 | dBm |
| Connectors RF/IF | N/BNC | N/BNC | N/BNC | N/BNC | |
| Supply voltage | 13.8 | 13.8 | 13.8 | 14.5 | VDC |
| Current consumpt. | 5 | 5 | 5 | 5 | A |
| Dimensions | 300 X 220 X 90 | | | | mm |

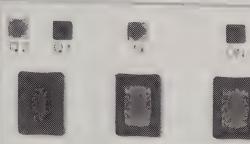


LT 24 S

1269-1271 MHz

1000 WATT MAX.

POWER OUTPUT



LT 23 S

1298 MHz TRANSVERTER

1000 WATT MAX.
SWR 1.5:1



LT 70 S

70-cm TRANSVERTER

1000 WATT MAX.
SWR 1.5:1



LT 2 S

2-m.-TRANSVERTER

1000 WATT MAX.



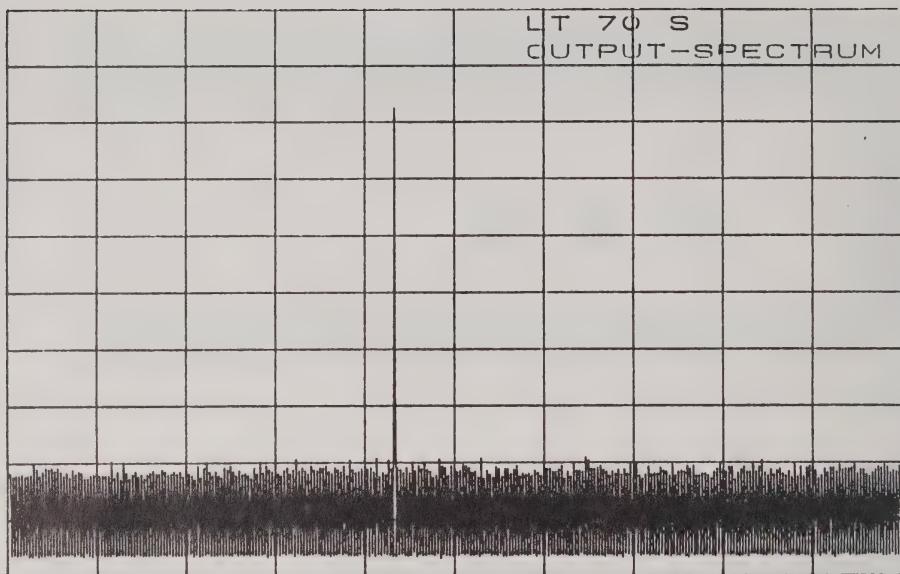
LT 6 S

6-m.-TRANSVERTER

1000 WATT MAX.



L T 70 S
C OUTPUT-SPECTRUM



CENTER 500MHz

*RBW 30KHz

VBW 30KHz

SPAN 1.000GHz

SWP 3.0sec

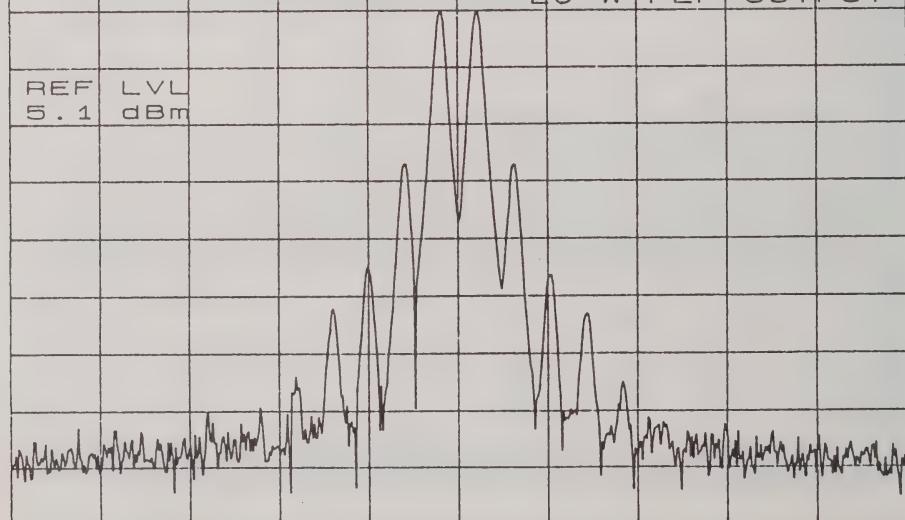
ATTEN 20dB

RL 5.1dBm

10dB/

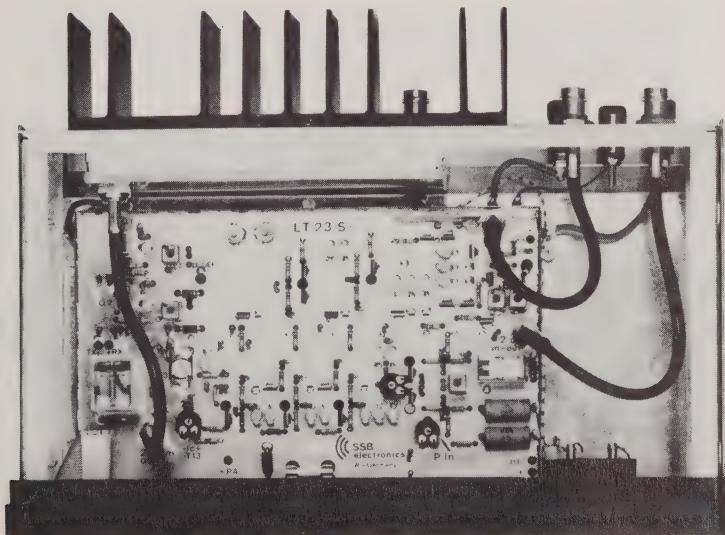
L T 70 S
20 W PEP

IMD
OUTPUT



23-cm + 33-cm TRANSVERTERS

The **LT 23 S** is a high performance 10 watt linear transverter that covers 1296 ... 1298 MHz with a corresponding IF of 144 ... 146 MHz. It features a low noise GaAs-Fet preamplifier followed by an active GaAs-Fet mixer resulting in a noise figure of less than 1.8 dB and a conversion gain of 20 dB. A second switchable local oscillator (crystal not included) is also provided for IF QSY. A built in adjustable attenuator to match IF drive levels from 0.1 ... 10 watts, an illuminated power output meter, manual or PTT T/R switching, split RX in/ TX out plus a built in IF switchover relay are all standard features. On transmit, a push-pull mixer and a four stage filter coupled linear amplifier using rugged Philips transistors guarantees a clean output spectrum. The **LT 23 S** is housed in an attractive vinyl clad steel cabinet. 14.5 VDC ... Dimensions 300 X 220 X 90 mm ... BNC-connectors ... N-connector for RF output.



L T 3 3 S

The **L T 3 3 S** is a specially designed transverter for the USA covering 902 ... 904 MHz with a corresponding IF of 144 ... 146 MHz. All other specifications are the same as the **L T 2 3 S** except linear output is 6 watts. Please specify **O P T I O N 0 1** for 20 watts linear output.

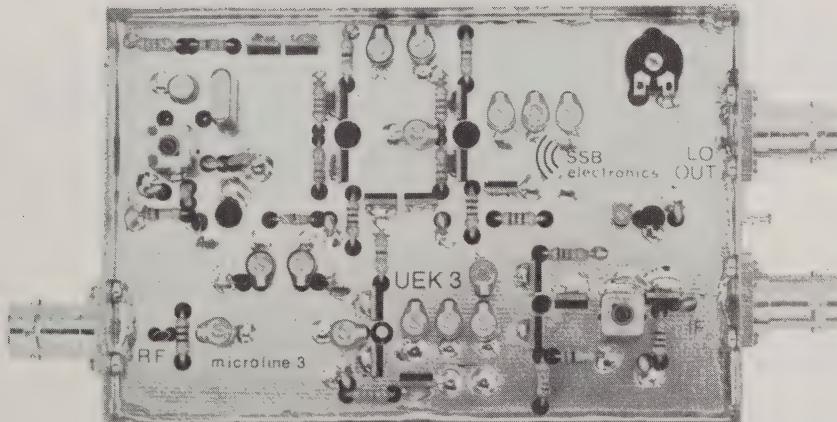


23-cm TRANSVERTER MODULES

Since many amateurs do not require a transverter housed in a custom cabinet complete with metering and switching relays, we are pleased to offer the *UEK-3* receive down converter, *USM-3* transmit up converter, and the *PA 2310* linear power amplifier. Combined, these modules offer superb performance at an affordable price. These high performance low cost transverter modules are carefully tuned and tested on spectrum and noise-gain analyzers for maximum performance. Each unit is available separately for integration into custom applications.

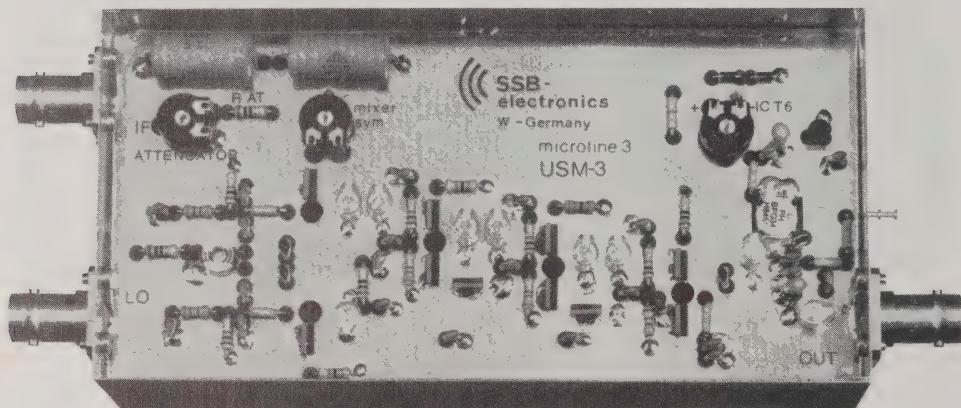
UEK-3

The *UEK-3* receive down converter covers 1296 ... 1298 MHz with a corresponding IF output of 144 ... 146 MHz. This module features a GaAs-Fet preamplifier followed by an active GaAs-Fet mixer resulting in a 2.2 dB or less noise figure and 20 dB of conversion gain. A separate local oscillator port is also provided with an output of + 10 mW at 1152 MHz for transmitter mixer operation. This module is housed in a RF tight tin plated enclosure. 13.8 VDC ... Dimensions 74 X 111 X 30 mm ... BNC-connectors.



USM-3

The **USM-3** transmit up converter covers 1296 ... 1298 MHz with a corresponding IF input of 144 ... 146 MHz. Since any 2 MHz segment between 1200 ... 1300 MHz can be covered with retuning and suitable L.O. input, this module is ideally suited for OSCAR or FM-TV use. The **USM-3** requires an L.O. input of 10 mW (available from the **UEK-3**) and features a push-pull mixer and four stages of linear amplification. An internally adjustable attenuator is provided to accomodate drive levels from 20 mW - 10 watts for 1 watt of linear output. This module is housed in a RF tight tin plated enclosure. 13.8 VDC ... Dimensions 74 X 148 X 40 mm ... BNC-connectors.



PA 2310

The **PA 2310** is a solid state 10 watt linear amplifier with a useable bandwidth of +/- 10 MHz. With retuning, any 20 MHz segment between 1200 ... 1300 MHz can be utilized. This amplifier requires 0.5 watt drive for 10 watts output. The **PA 2310** is constructed in a heavy duty die cast aluminum housing and is fitted with an additional heat sink for cool and stable operation. 13.8 V DC ... Dimensions 80 X 176 X 58 mm ... BNC-connectors.

PA 2310 Opt 1

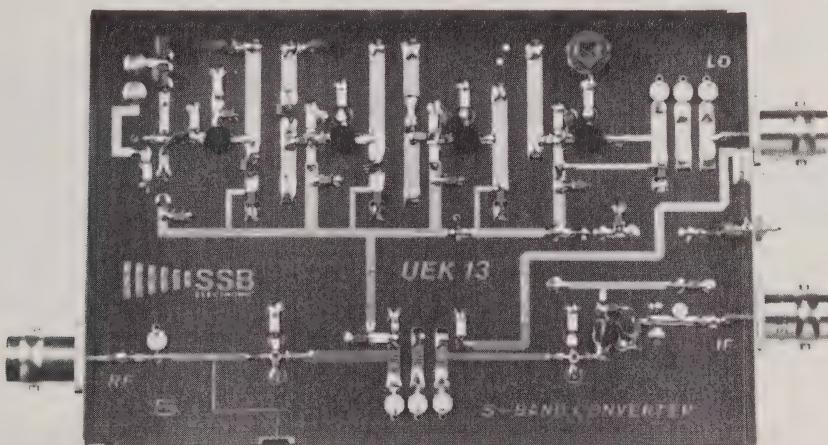
Same as above but 20 watts output with 1 watt drive, teflon pc board, N-connectors.

13-cm TRANSVERTER MODULES

This complete line of 13-cm modules can be combined to form an outstanding transverter yielding 5 watts of linear output and a noise figure of less than 2 dB. These high quality units are carefully tuned and tested on spectrum and noise-gain analyzers for maximum performance. Each unit is available separately for integration into custom applications.

UEK-13

The **UEK-13** receive down converter covers 2320 ... 2322 MHz or 2304 ... 2306 MHz (please specify) with a corresponding IF output of 144 ... 146 MHz. This module features a GaAs-Fet pre-amplifier followed by an active GaAs-Fet mixer resulting in a 2 dB or less (1.8 dB typ.) noise figure and 20 dB of conversion gain. A separate local oscillator port is also provided with an output level at 10 mW for transmitter mixer operation. This module is constructed on a teflon pc board and is housed in an RF tight tin plated enclosure. 13.8 VDC ... Dimensions 74 X 111 X 30 mm ... N-connector for RF input ... BNC-connectors for IF/LO



STM 13 B

The **STM 13 B** transmit up converter covers 2320 ... 2322 MHz or 2304 ... 2306 MHz (please specify) with a corresponding IF input of 144 ... 146 MHz. It requires a L.O. input of 10 mW (available from the **UEK-13**) and features a push-pull mixer and four stages of linear amplification. An internally adjustable attenuator is provided to accommodate drive levels from 20 mW - 0.5 watt for 1 watt of linear output. Due to its broadband input matching, this unit is also suitable for FM-TV operation. This module is constructed on a teflon pc board and is housed in an RF tight tin plated enclosure. 13.8 VDC Dimensions 74 X 148 X 30 mm ... BNC- connectors.



SLA 13 B

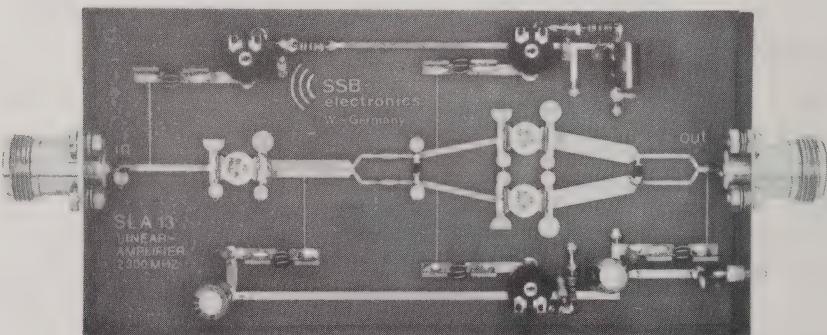
The **SLA 13 B** is a solid state 5 watt linear amplifier with a useable bandwidth of +/- 10 MHz. With retuning, any 20 MHz segment between 2200 ... 2400 MHz can be utilized. This amplifier requires 0.5 watt drive for 5 watts output. 13.8 VDC ... Dimensions 74 X 148 X 40 mm ... N-connectors.

SLA 13 B OPTION 01

Same as above but 7.5 watts output with 1 watt drive.

SLA 13 B OPTION 02

Same as above but 10 watts output with 1.5 ... 2 watt drive.

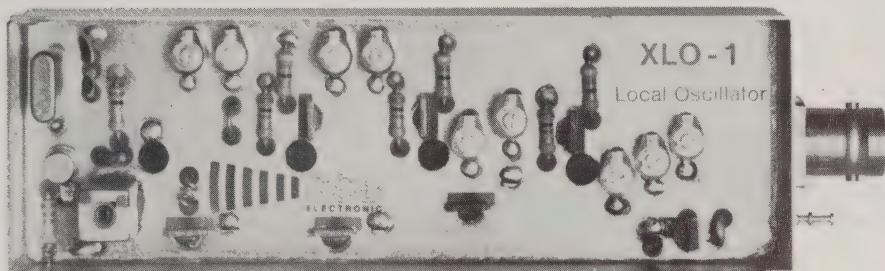


10 GHZ TRANSVERTER MODULES

This complete line of 10 GHz modules can be combined to form an outstanding linear transverter yielding 200 mW of linear output and a noise figure of less than 2.5 dB on 10.368 GHz. In August 1988, Kent Britain, WA5VJB used this transverter system to make the first 10 GHz EME-QSO (World record) with WA1CJO. All modules are carefully tuned and tested on spectrum and noise-gain analyzers for maximum performance. Each unit is available separately for integration into custom applications. Various modifications are available for commercial applications. Please contact us regarding your requirements.

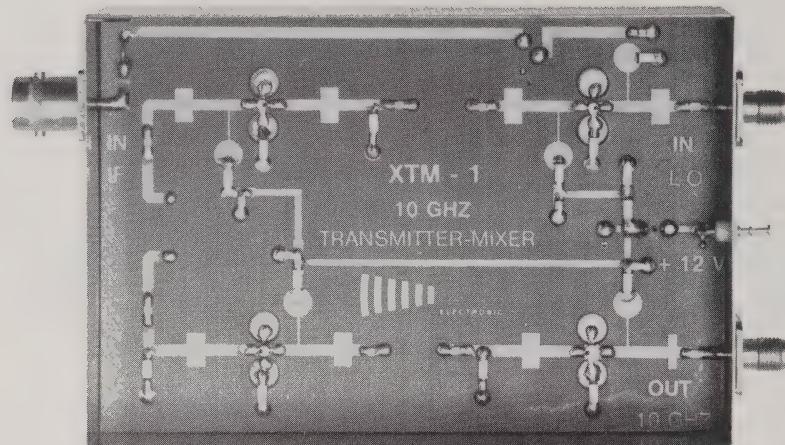
XLO-1

The **XLO-1 OPT. 01** local oscillator module provides a minimum of 5 mW output on 2556 MHz. Starting with an oscillator operating on 106.5 MHz, all stages are filter coupled to insure a clean (X24) output. All spurious signals are more than 40 dB down. 13.8 VDC ... Dimensions 37 X 111 X 30 mm ... BNC-connector.



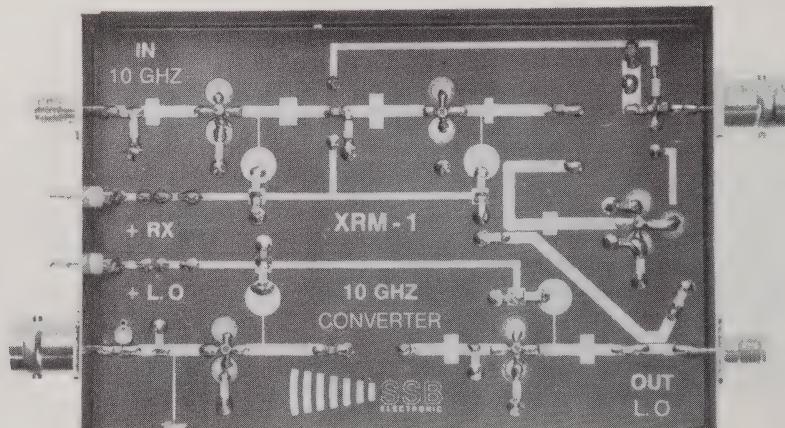
XTM-1

The **XTM-1** transmit up converter covers 10368 ... 10370 MHz with a corresponding IF input of 144 ... 146 MHz. It requires a L.O. input of 5 mW (available from **XRM-1**) and features an active GaAs-Fet mixer plus three GaAs-Fet stages of linear amplification. To insure a clean output, silver plated cavity resonators are used between each stage. Unwanted products are more than 35 dB down. Due to its broadband input matching, the **XTM-1** is also suitable for digital microwave links and TV applications. An internally adjustable attenuator is provided to accommodate drive levels from 20 mW ... 3 Watts for 100 mW of linear output. This unit is constructed on a teflon pc board and is housed in an RF tight tin plated enclosure. 13.8 VDC ... Dimensions 74 X 111 X 30 mm ... Connectors 2 SMA & 1 BNC.



XRM-1

The **XRM-1** receive down converter covers 10368 ... 10370 MHz with a corresponding IF output of 144 ... 146 MHz. This module features a two stage GaAs-Fet preamplifier, a silver plated cavity for image rejection and an active GaAs-Fet mixer. With this configuration, a noise figure of less than 2.5 dB and a conversion gain of 20 dB is obtained. The **XRM-1** also contains two cavity coupled stages that serve to multiply the 2556 MHz local oscillator input to the mixer injection frequency of 10224 MHz. A separate port is also provided with an output level of 5 mW on 10224 MHz for transmitter mixer operation. This unit is constructed on a teflon pc board and is housed in a RF tight tin plated enclosure. 13.8 VDC ... Dimensions 74 X 111 X 30 mm ... Connectors 2 SMA & 2 BNC.



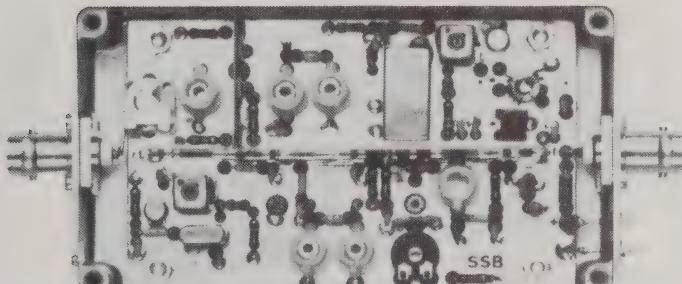
RECEIVE CONVERTERS

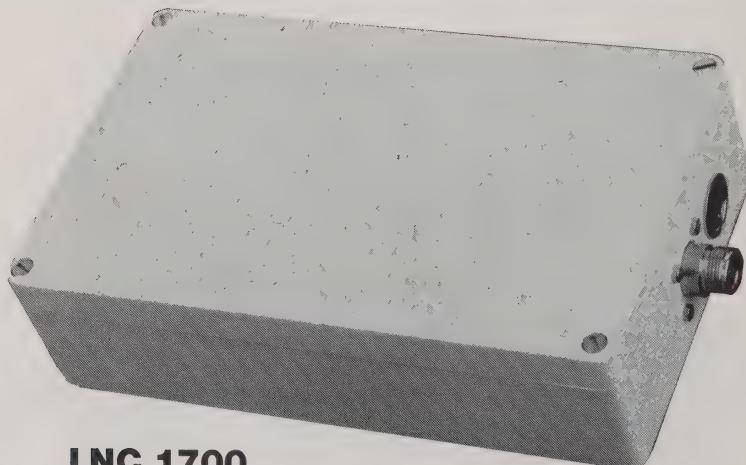
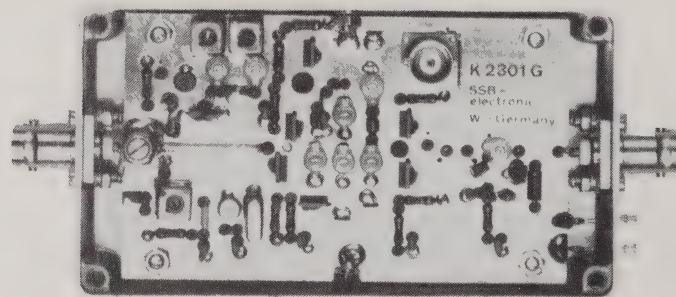
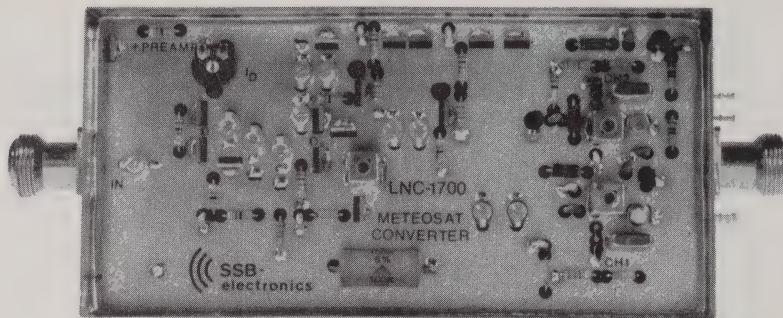
We are pleased to offer a full line of modern design VHF-UHF SHF converters for those applications that require receive only capability. For superb strong signal performance, our VHF/UHF converters feature: low noise preamplifiers, double balanced schottky mixers with diplexer terminated IF ports, plus IF post-amplifiers. Our SHF converters (23-cm & above) include: low noise GaAs-Fet preamplifiers, printed circuit band pass filters and active GaAs-Fet mixers. Except where indicated, all converters are housed in attractive die cast aluminum cases. For special applications, other frequency and IF combinations are available. Please contact us regarding your particular requirements. 13.8 VDC ... Dimensions 155 X 64 X 30 mm ... BNC-connectors.

| MODEL | RF MHz | IF MHz | N.F. | -dB- | GAIN |
|----------------------|---------------|---------------|-------------|-------------|-------------|
| K5001 | 50-52 | 28-30 | 1.5 | | 20 |
| K3001 | 136-38 | 28-30 | 1.5 | | 20 |
| K2001 | 144-46 | 28-30 | 1.5 | | 20 |
| K7001-10 | 432-34 | 28-30 | 2.3 | | 20 |
| K7001-2 | 432-34 | 144-46 | 2.3 | | 20 |
| K7001 ATV | 434-40 | CH 4 | 2.3 | | 16 |
| K2301 ATV | 1250-90 | CH 7-12 | 1.8 | | 17 |
| K2301 G-10 | 1296-98 | 28-30 | 1.8 | | 20 |
| K2301 G-2 | 1296-98 | 144-46 | 1.8 | | 20 |
| LNC-1700 * | 1694.5/1691 | 137.5 | 1.5 | | 25 |
| UEK-13 P3C ** | 2400-02 | 144-46 | 1.8 | | 20 |
| UEK-13 | 2320-22 | 144-46 | 1.8 | | 20 |

* 2 channel down converter for weather satellite reception. This unit is available as an indoor module or an outdoor unit in a weatherproof case with a built in heater.

** Down converter for AMSAT P3C satellite, Rf tight tin plated enclosure.





LNC 1700

SOLID STATE LINEAR AMPLIFIERS

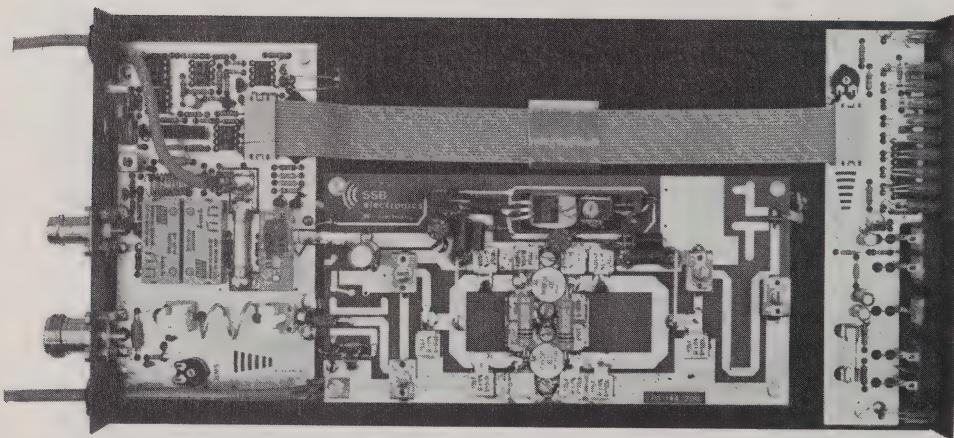
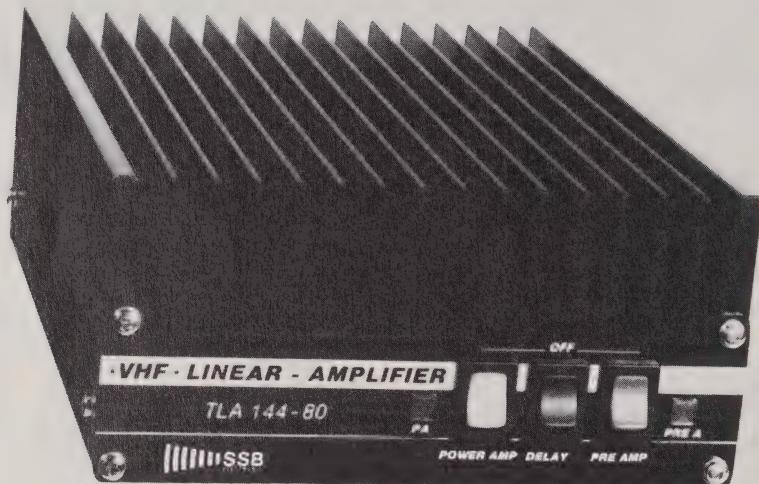
These state of the art transistorized power amplifiers feature : all mode operation (CW, FM, SSB), RF sensed (VOX) or hard keying, remote control of mast-mounted preamplifiers via the coax cable, built in low pass filters and low insertion loss in the bypass mode. Full length heavy duty heatsinks are used to provide cool and stable operation during long transmitting periods.

For commercial applications, various modifications are possible. Solid state amplifiers up to 1000 watts RF output in the VHF range and 500 watts in the UHF range are available. Please contact us for further information.

| TYPE | BAND | INPUT | OUTPUT | REMARKS |
|--------------------|-------------|--------------|---------------|----------------|
| TLA 144-50 | 2-m | 3 watts | 50 watts | low cost |
| TLA 144-80 | 2-m | 10 watts | 80 watts | low cost |
| TLA 144-200 | 2-m | 20 watts | 180 watts | see note |
| TLA 432-50 | 70-cm | 10 watts | 50 watts | low cost |
| TLA 432-100 | 70-cm | 10 watts | 100 watts | see note |

Note: Bargraph meter for RF output * Adjustable VOX delay time*
Built in protection against: poor SWR, overheat, overvoltage
and reverse polarity.



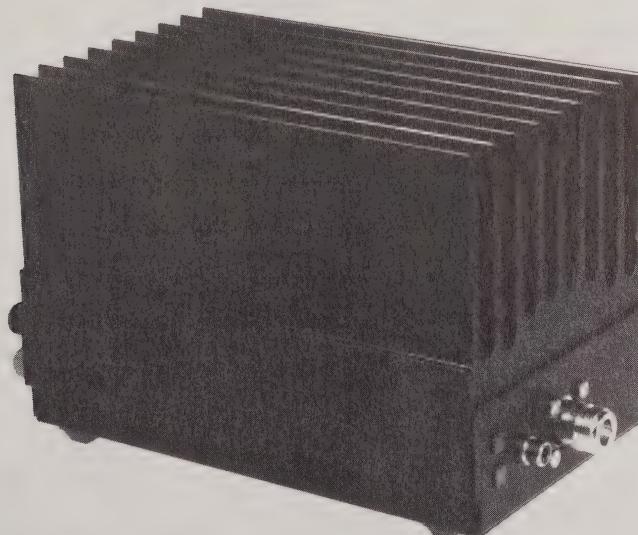


23-cm LINEAR POWER AMPLIFIERS

These solid state linear amplifiers feature a state of the art design based upon the M 57762 power module. They are suitable for all mode operation like SSB,CW,FM, AM/FM-TV and cover 1250 -1300 MHz. The 50 watt amplifiers employ a combination of three power modules while the 100 watt amplifier utilizes a combination of six power modules. Each amplifier is housed in a rugged steel cabinet with heavy duty heatsinks for cool operation during long transmitting periods.

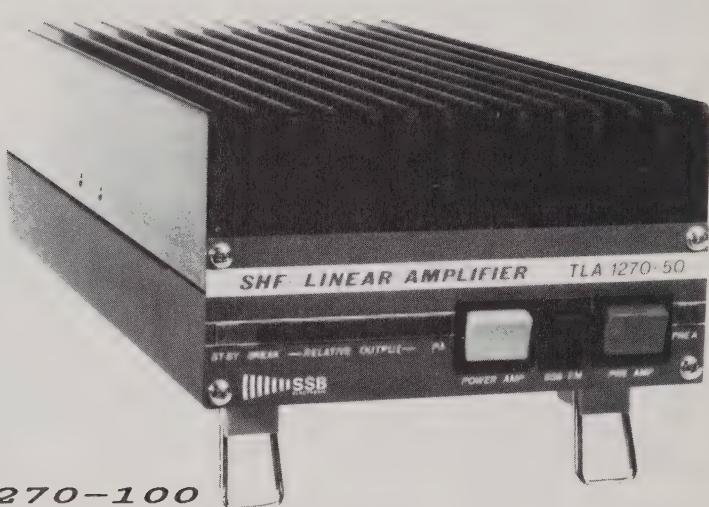
PA 2350

This low cost linear amplifier delivers 50 watts output with 1 watt of RF drive. It features overdrive and SWR failure protection. TX/RX switchover relays are not provided. 13.8 VDC * Current consumption 11 A * N-connectors * Dimensions 185 X 114 X 129 mm.



TLA 1270-50

This linear amplifier delivers 50 watts of RF output with either 3 or 10 watts of RF drive (please specify). This model features: RF sensed (VOX) or PTT operation, remote control of mast mounted preamplifiers via the coax cable, low insertion loss coax relays for T/R switching, and a bargraph meter for monitoring RF output. In addition, protection circuitry is provided to guard against overdrive, reverse polarity, overheat and SWR failure. This linear amplifier is ideally suited for bench or mobile operation. 13.8 VDC * Current consumption 12 A * N-connectors * Dimensions 150 X 300 X 95 mm.



TLA 1270-100

This linear power amplifier delivers 100 watts of RF output with 10 watts (3 watts as Option) of RF drive. Two low noise temperature controlled blowers plus a heavy duty heat sink insure cool and stable operation during long transmitting periods. The TLA 1270-100 features: A built in calibrated RF output power meter, RF sensed (VOX) or PTT operation, remote control of mast-mounted preamplifiers via the coax cable and two high quality low insertion loss relays for T/R switchover. In addition, protection circuitry is provided to guard against: overdrive, reverse polarity, overheat and SWR failure. This amplifier is ideally suited for bench or mobile operation. 13.8 VDC * Current consumption 25 A * N-connectors * Dimensions 360 X 202 X 100 mm.

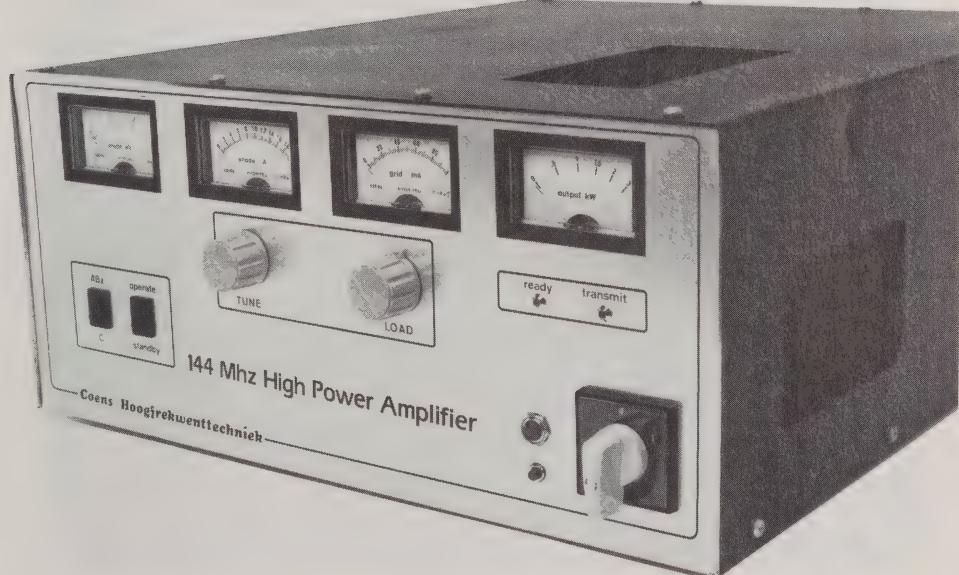


HIGH POWER VACUUM TUBE AMPLIFIERS

These state of the art high power vacuum tube amplifiers feature EIMAC's rugged 3CX 800 A7 triodes in a grounded grid configuration. Each amplifier has a built in heavy duty power supply for 24h full SSB output plus a high quality blower for cool operation. Silver plated resonators and tuning flappers driven by teflon ribbons insure high efficiency and stable operation. Automatic warm-up delay, grid current protection plus full metering of grid/plate current and RF output power are all standard features. Built in coax relays are provided on single tube amplifier models. We offer special solutions for commercial applications with power outputs up to 30 kw FM.

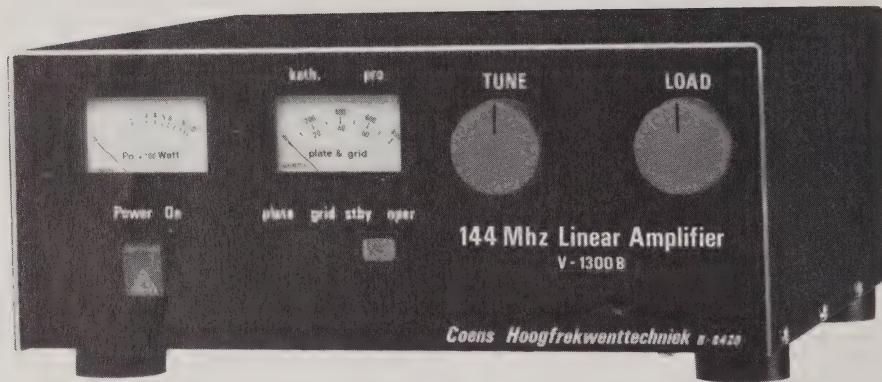
TECHNICAL DATAS V 1300 * U 1000

| | | | |
|-----------------|-------|-----------|-----------|
| Frequency range | MHz | 144 - 146 | 430 - 440 |
| RF output power | Watts | 1000 | 800 |
| Drive power | Watts | 40 | 45 |
| Efficiency | % | 60 | 52 |
| Insertion loss | dB | 0.1 | 0.5 |



TECHNICAL DATAS V 2500 * U 2000

| | | | |
|------------------------|--------------|------------------|------------------|
| Frequency range | MHz | 144 - 146 | 430 - 440 |
| RF output power | Watts | 2000 | 1500 |
| Drive power | Watts | 80 | 90 |

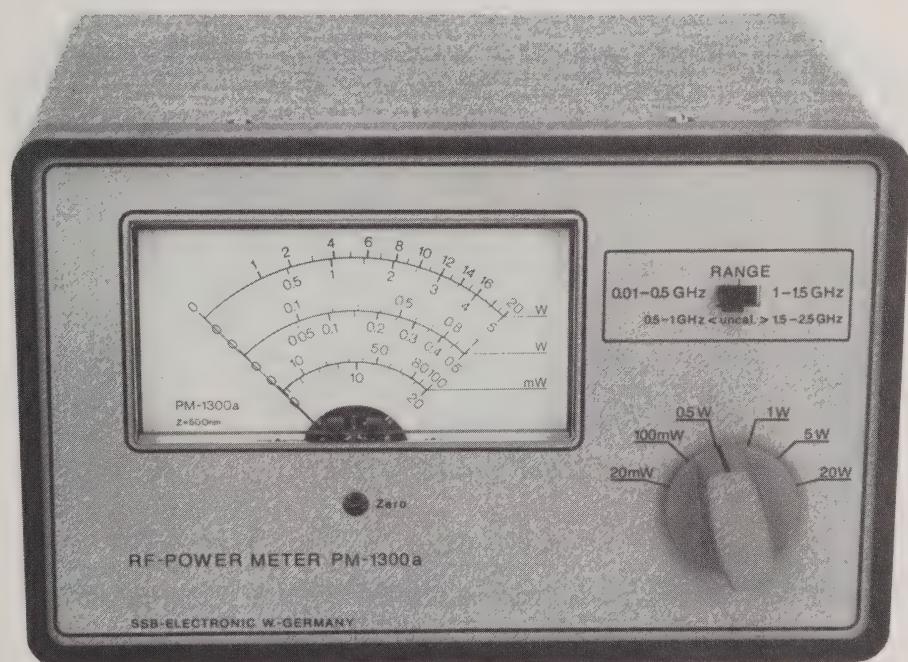


MEASUREMENT EQUIPMENT

PM 1300 A

The **PM 1300 A** is a general purpose absorbtion power meter for use between 10 MHz ... 1500 MHz. It is an excellent unit for tuning and testing L.O.'s, transceivers, transmitters and low power amplifiers. The **PM 1300 A** features: Six front panel selectable measurement ranges from 20 mW f.s. ... 20 W f.s., 50 Ohm impedance, a heavy duty heat sink for 100 % duty cycle and excellent return loss through the use of a precision load termination rated to 4 GHz. With the use of directional couplers like **EME 7020** or **2320**, measurements up to the 1000 watt level are possible. N-female connector.

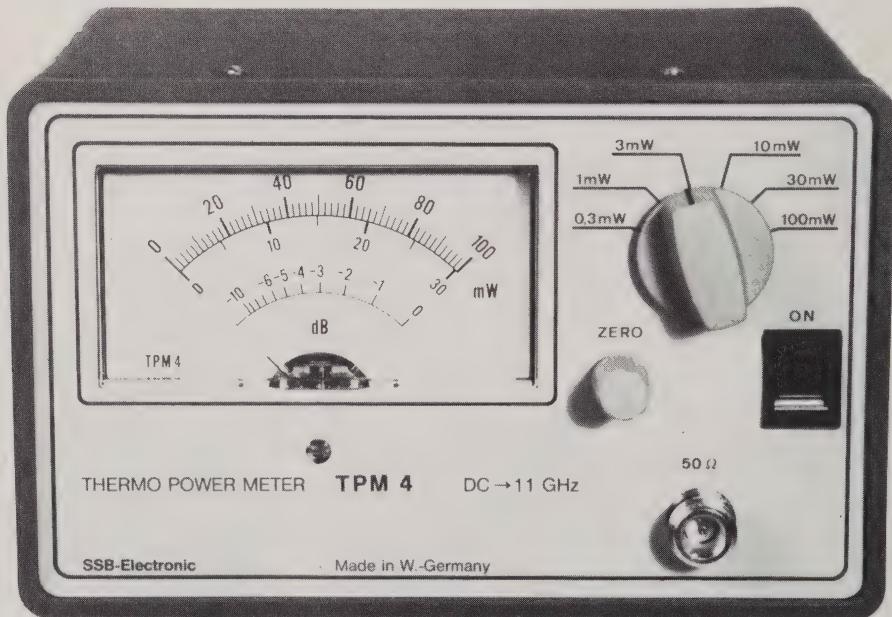
| | | |
|--------------------------------|------------------------|-----|
| Frequency range calibr. | 10 - 500 ; 1000 - 1500 | MHz |
| uncal. | 500 -1000; 1500 - 2500 | MHz |
| Measurement ranges f.s. | 20, 100, 500 | mW |
| | 1, 5, 20 | W |
| Accuracy calibr. ranges | better than 10 ; typ. | % |
| uncal. ranges | better than 20 | % |
| Return loss 1.3 GHz/1 W | more than 20 | dB |
| Dimensions | 200 X 135 X 125 | mm |
| Weight | 1.8 | kg |



TPM 4

The **TPM 4** is a precision thermo coupled power meter covering a frequency range of DC ... 11 GHz. Six front panel selectable measurement ranges from 0.3 ... 100 mW, Type "N" female connector, internal battery power, plus an attractive vinyl clad steel cabinet are all standard features. When lab standard accuracy and its associated cost (X 5 or more) is not required, the **TPM 4** is a cost effective alternative for amateur, lab, university, and field service personnel.

| | | |
|--------------------------------|-------------------------------|-------------------------|
| Measurement ranges f.s. | 0.3, 1, 3, 10, 30, 100 | mW |
| Accuracy | 0 ... 2 GHz | better than 5 % |
| | 2 ... 11 GHz | better than 10 % |
| Measurement time | 1 sec. for 50% f.s. | |
| Dimensions | 200 X 135 X 125 | mm |
| Weight | 1.8 | kg |

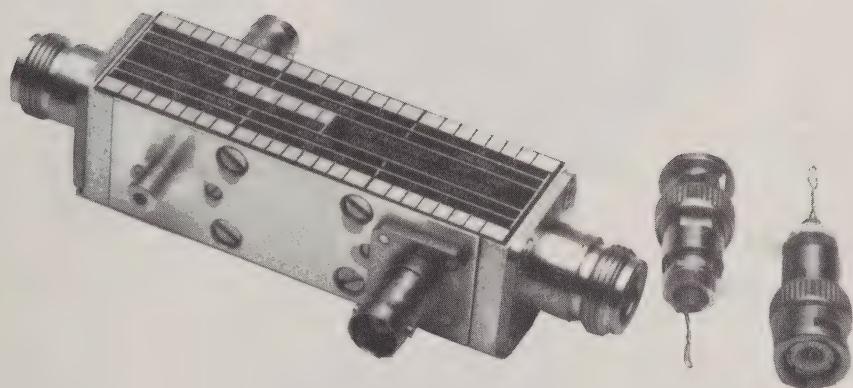


DUAL DIRECTIONAL COUPLERS

These precision directional couplers are milled out of solid brass and are silver plated for low insertion loss. They feature female "N" connectors for throughline and BNC connectors for the measurement lines. Each coupler is individually tuned for maximum directivity. Calibration points are provided for both forward and reverse directions. A matched pair of detector probes are also available.

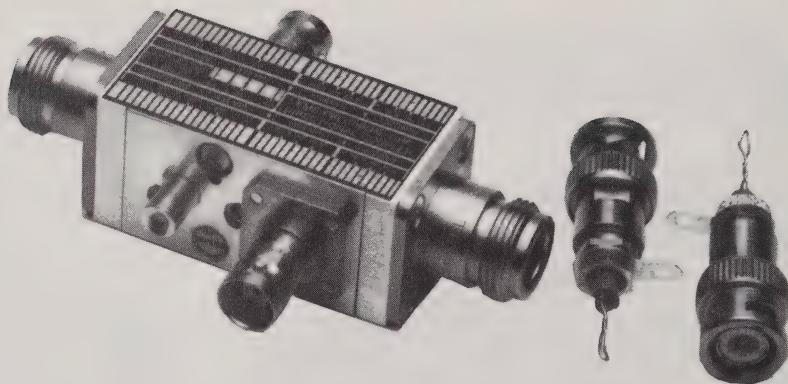
EME 7020/30A

| <i>Frequency</i> | 144 | 432 | 1296 | <i>MHz</i> |
|-----------------------------|------------------|-----------------|-----------------|-------------|
| <i>Coupling</i> | 30 +/- 2 | 20 +/- 2 | 14 +/- 2 | <i>dB</i> |
| <i>Calibration accuracy</i> | +/- 0.2 | +/- 0.2 | +/- 0.2 | <i>dB</i> |
| <i>Directivity</i> | 30 | 30 | 30 | <i>dB</i> |
| <i>SWR max.</i> | 1.02 | 1.03 | 1.11 | |
| <i>Max. power FM/SSB</i> | 1000/2000 | 100/200 | 25/50 | <i>W</i> |
| <i>Impedance</i> | 50 | | | <i>Ohms</i> |
| <i>Weight</i> | 0.45 | | | <i>kg</i> |



EME 2320/30A

| | | | | |
|-----------------------------|------------------|-----------------|-----------------|-------------|
| Frequency | 432 | 1296 | 2320 | MHz |
| Coupling | 30 +/- 2 | 20 +/- 1 | 16 +/- 1 | dB |
| Calibration accuracy | +/- 0.3 | +/- 0.3 | +/- 0.3 | dB |
| Directivity | 30 | 30 | 30 | dB |
| SWR max. | 1.03 | 1.06 | 1.08 | |
| Max. power FM/SSB | 1000/2000 | 100/200 | 50/100 | W |
| Impedance | 50 | | | Ohms |
| Weight | 0.3 | | | kg |



COAXIAL RELAYS

CX 120 A

The **CX 120 A** is a low cost relay specifically designed for directly attaching RG 58/AU type cables without the use of external connectors. * P_{max} 150 W PEP * insertion loss 0.2 dB * isolation 35 dB/500 MHz * frequency range DC ... 500 MHz * 12 VDC *



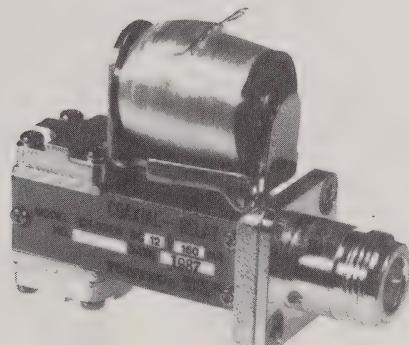
CX 120 A

CX 120 P

Same as **CX 120 A** but suitable for pc board installation.

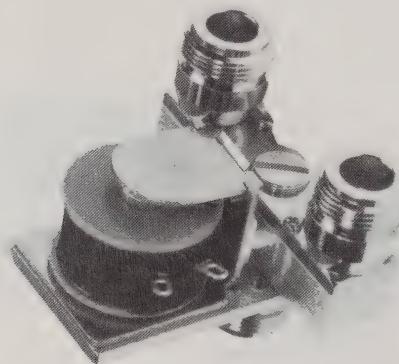
CX 531 N

This relay allows direct attachment of RG 58/AU type cables at the NC & NO ports. A female N-connector is provided at the common port. * P_{max} 400 W PEP * insertion loss 0.1 dB/500 MHz * isolation 38 dB/500 MHz * frequency range DC ... 1500 MHz * 12 VDC *



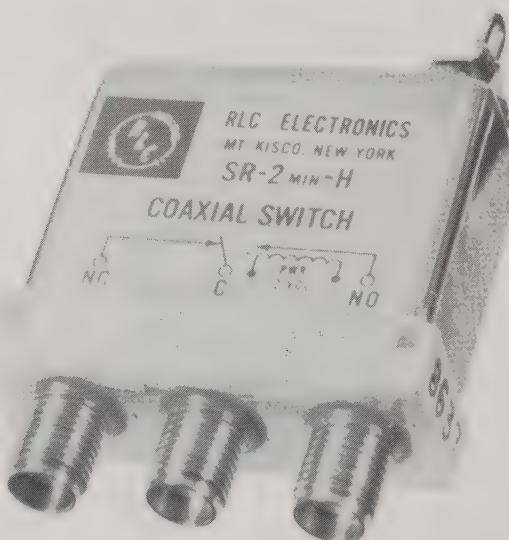
RK 500

This relay features: female N-connectors (3), low insertion loss, high isolation, and medium power handling capability.
* *Pmax 500 W PEP* * *insertion loss 0.1 dB* * *isolation 60 dB/500 MHz* * *frequency range DC ... 3 GHz* * *12 VDC* * *160 mA* *



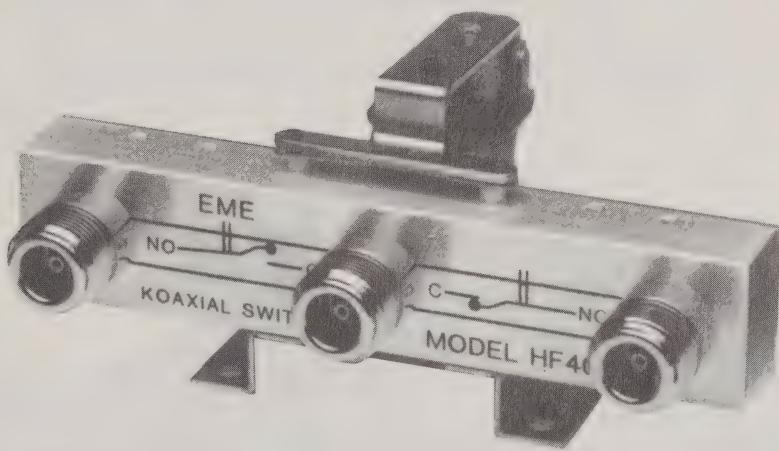
SR-2

The SR-2 is a high quality relay with very low insertion loss and high isolation at SHF frequencies. * *Pmax 60 W/10 GHz* * *insertion loss 0.2 dB/12 GHz* * *isolation 70 dB/12 GHz* * *frequency range DC ... 18 GHz* * *SMA-connectors* * *12 VDC* * *250 mA* *



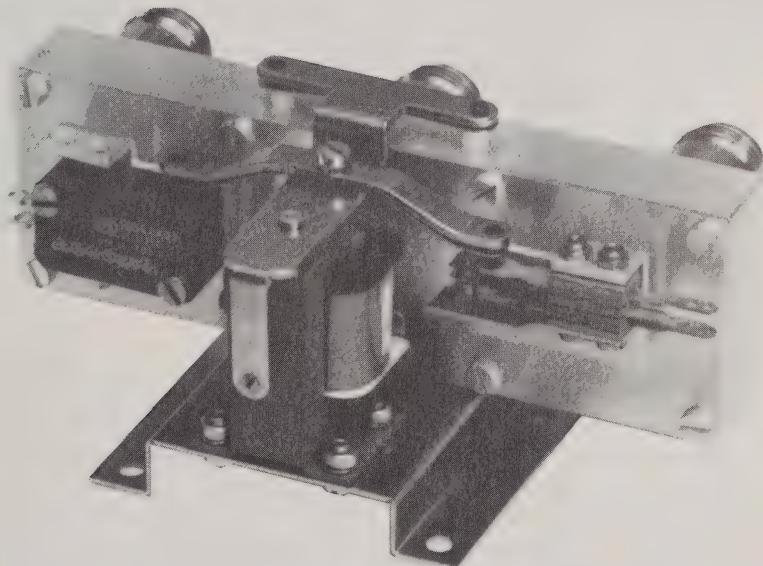
HF 400

The **HF 400** is a precision crafted DC ... 2.5 GHz high power relay that is milled out of solid brass and then silver plated for low insertion loss. * *N-connectors* * 12 VDC * 0.5 A * Transferable power is 2000 watts RF/100 MHz, 400 watts 2.5 GHz *



HF 400 2Z

Same as above but with external switching contacts.

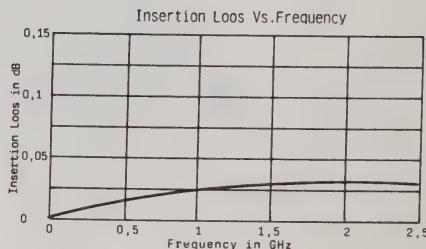
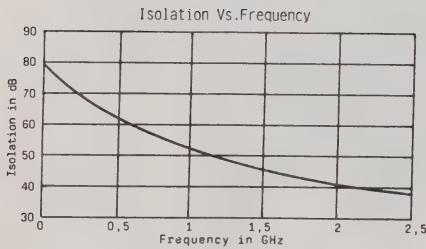
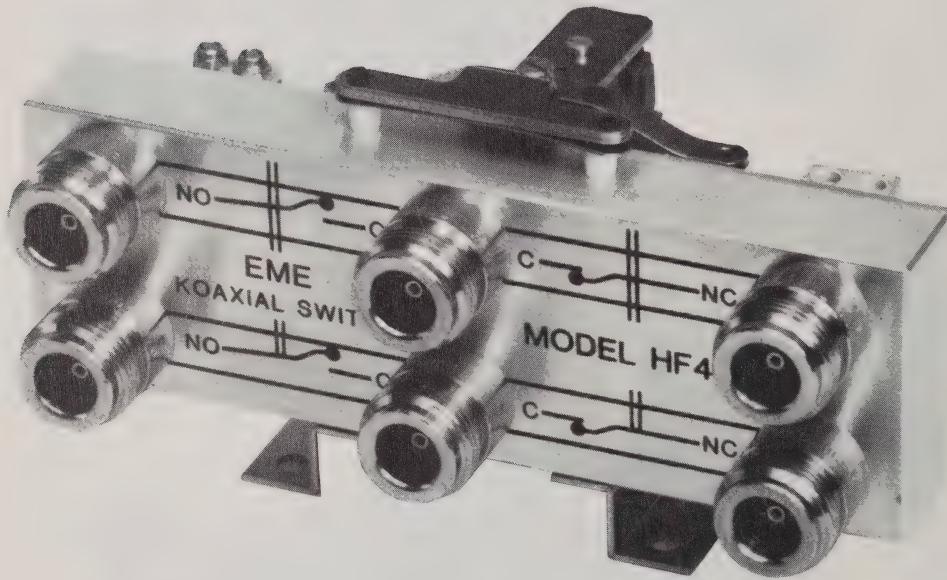


HF 402

This Relay has the same performance as the **HF 400** relay series except that it consists of two separate relays in one block. It is suitable for installing low noise preamplifiers or high power amplifiers into the feeder line with the option to bypass them in receive or transmitt mode.

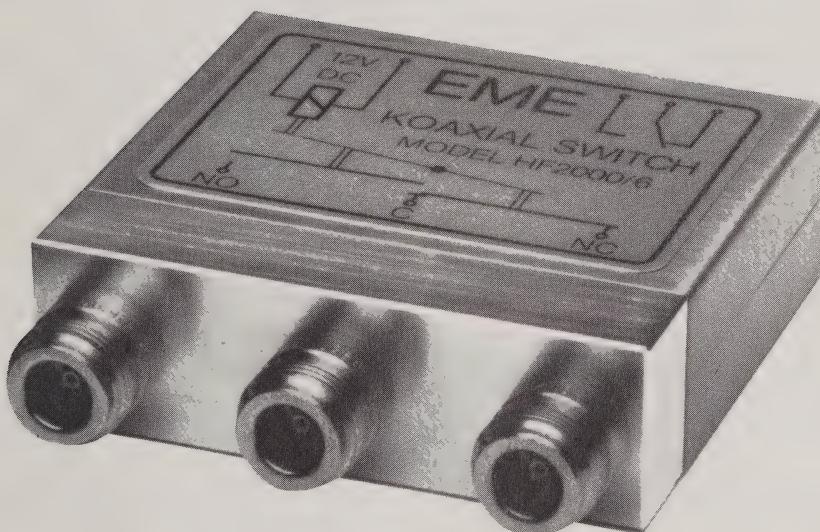
HF 402 2z

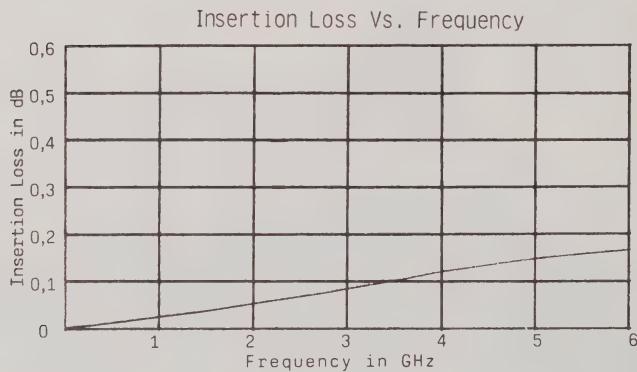
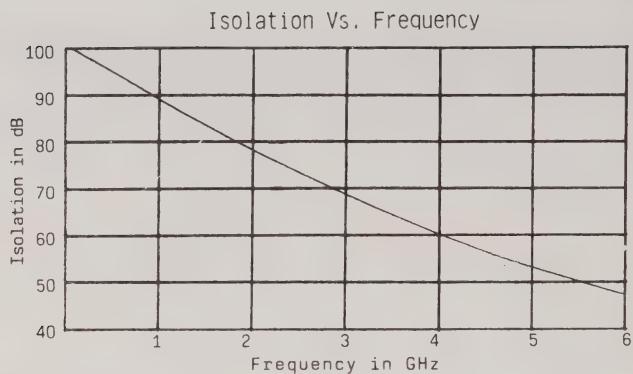
Same as above but with external switching contacts.



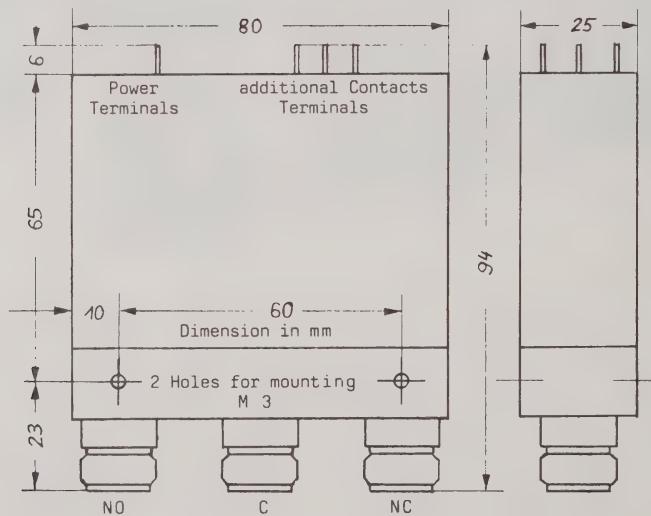
HF 2000/6

This precision crafted relay marks the top of the **EME** production line. It features: solid brass construction, silver plating for low insertion loss, and switching contacts consisting of hard silver with gold plating. Insertion loss, VSWR, and isolation characteristics are excellent and are guaranteed up to 6 GHz. * **N-connectors** * 12 VDC * 0.5 A * Transferable power is 2000 watts/100 MHz, 400 watts/6 GHz.





Outlines



How it began . . .

SSB-ELECTRONIC was founded in 1976 by Rolf Albert, DK8DD and Bernd Bartkowiak, DK1VA. Since its inception, our goal at **SSB-ELECTRONIC** is to provide the world wide amateur community with the finest VHF,UHF and SHF equipment available.

Some highlights in the "SSB" history include:

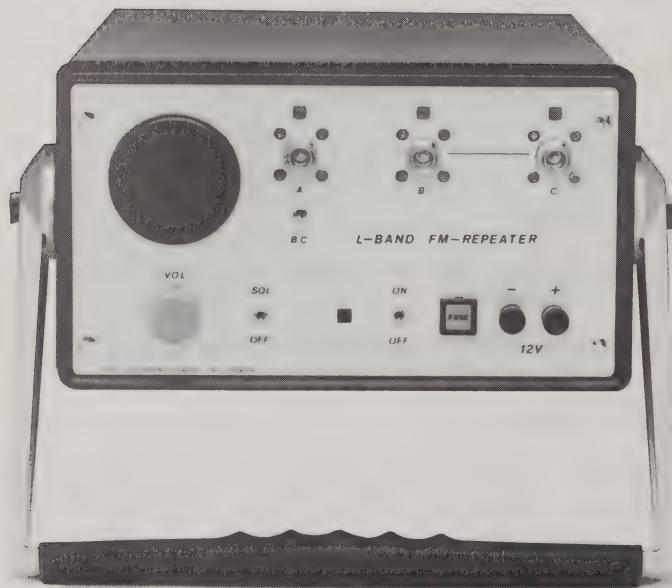
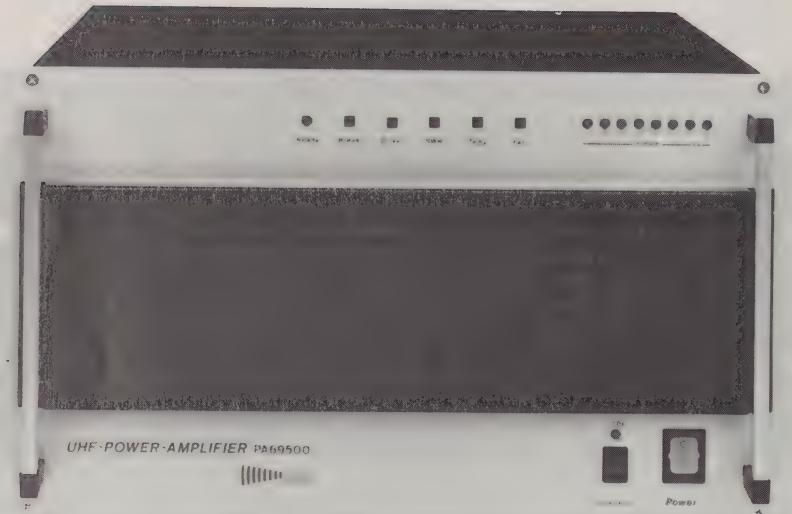
- 1977** Introduction of the first low noise 2-m preamplifier featuring a Siemens "BFT 66" and a noise figure of under 1.0 dB
- 1979** First 1.3 GHz linear transverter system in microstrip technique with 2.5 watts output and a noise figure of 2.5 dB.
- 1980** GaAs-Fet Preamplifiers for 2-m, 70-cm & 23-cm with noise figures of around 0.5 dB
- 1982** First 13-cm linear-transverter system (bipolar/GaAs-Fet) with 2.5 watts output and a noise figure of 0.8 dB
- 1983** Introduction of the *LT 23 S* , a "one box" 23-cm transverter with 10 watts output and a noise figure of under 1.8 dB
- 1986** First commercial available 10 GHz linear transverter system (GaAs-Fet) with 200 mW output and a 2.5 dB noise figure.
- 1988** Solid state linear power amplifiers for 1.3 GHz with 100 watts of clean RF output.

Due to the increased demand for commercial products from **SSB-ELECTRONIC**, a separate division was formed in 1985 to serve the industrial, medical and scientific communities. We can provide customized RF equipment such as :

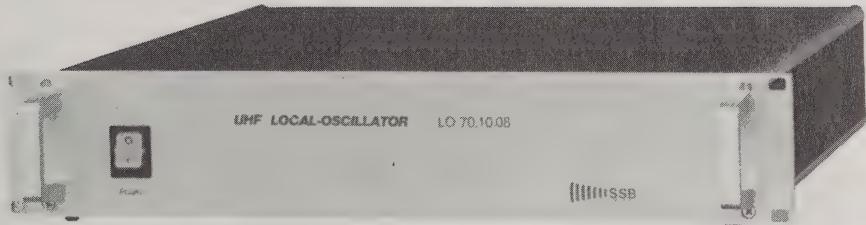
- * Low noise preamplifiers for radio astronomy and satellite reception up to X-Band
- * Transverters and converters up to X-Band for voice, picture and data transmission
- * Transmitters and receivers for wireless data links
- * Solid state & vacuum tube amplifiers/generators for industrial, medical and scientific use with RF outputs up to 35 kW

Please to not hesitate to contact us regarding your particular application.

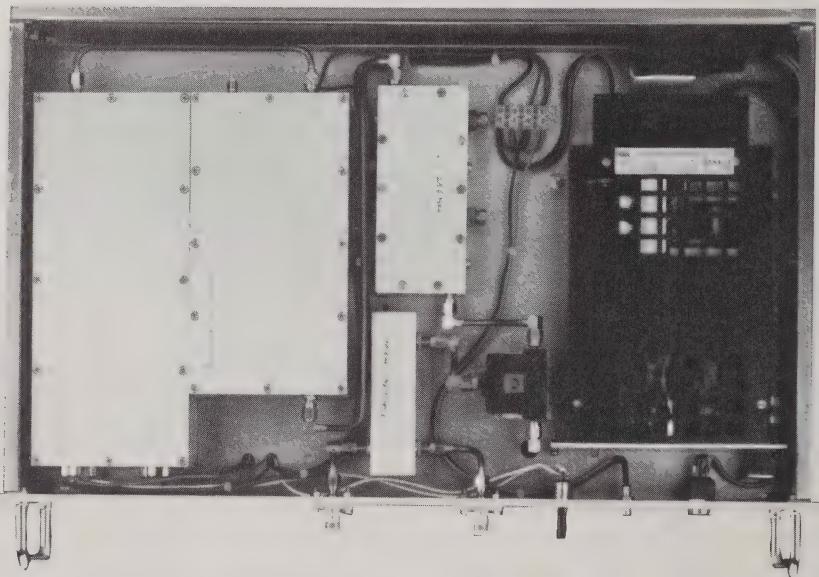
Samples of customized equipment



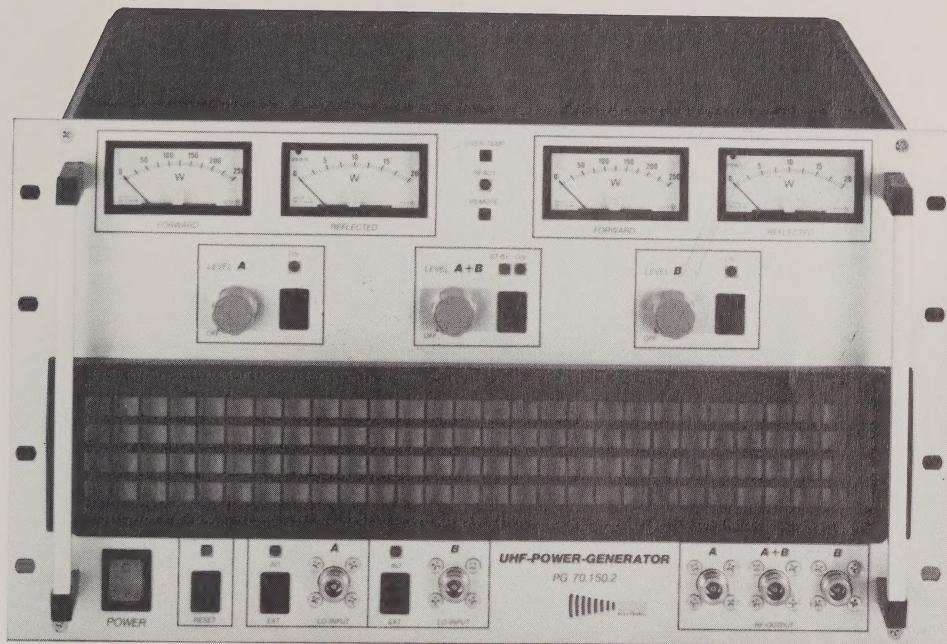
Samples of customized equipment



Samples of customized equipment



Samples of customized equipment



REPRESENTATIVE

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